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(54) Cable-tidy system

(57) A cable-tidy system, especially for holding cables, running to office desks and workstations, employs a first conduit (3) to be attached in a fixed position, e.g. upright at the corner of a desk (24) and a second conduit (1) to fit into the first. The first conduit is preferably plastic channel section (3) with a restricted mouth while the second conduit(s) is slit (2) corrugated plastic tube(s) (1) which snap fit into the first conduit (3). Cables (20) may extend across a flow grouped in second conduit (1) then up the leg of a desk in second conduit (1) held in first conduit (3) and thereafter lay loose in larger first conduit (12) providing a horizontal tray at the back of the desk (24). Two second conduits (1) may be located in one channel section (11, Fig. 7 not shown).

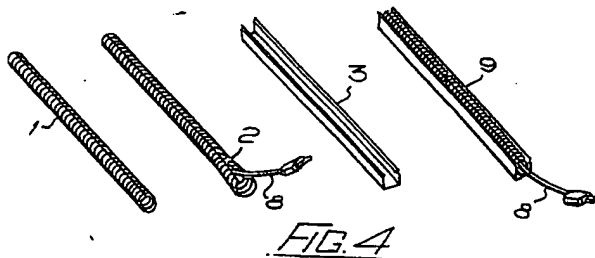


FIG. 4

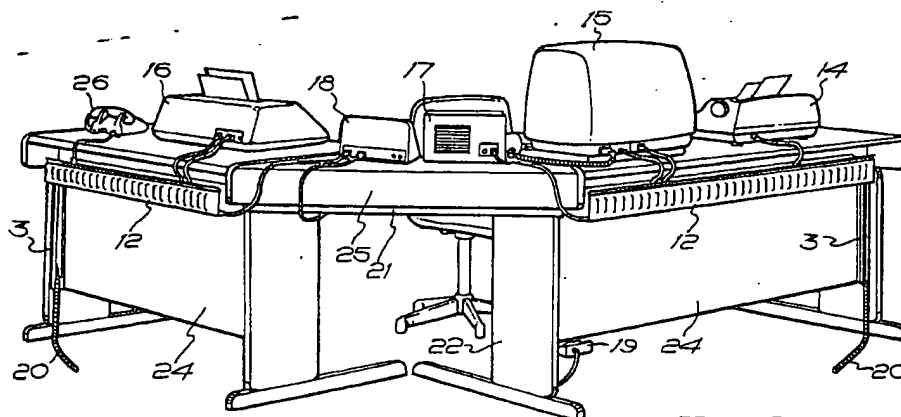
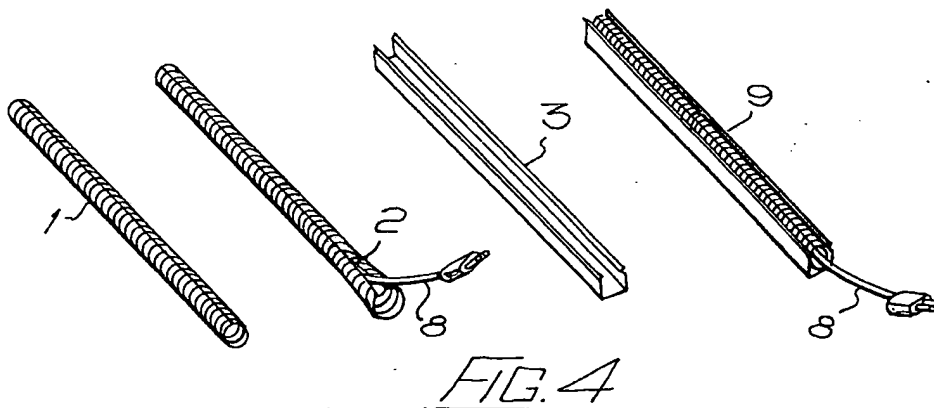
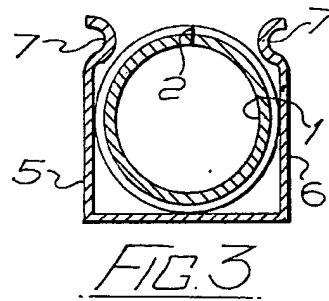
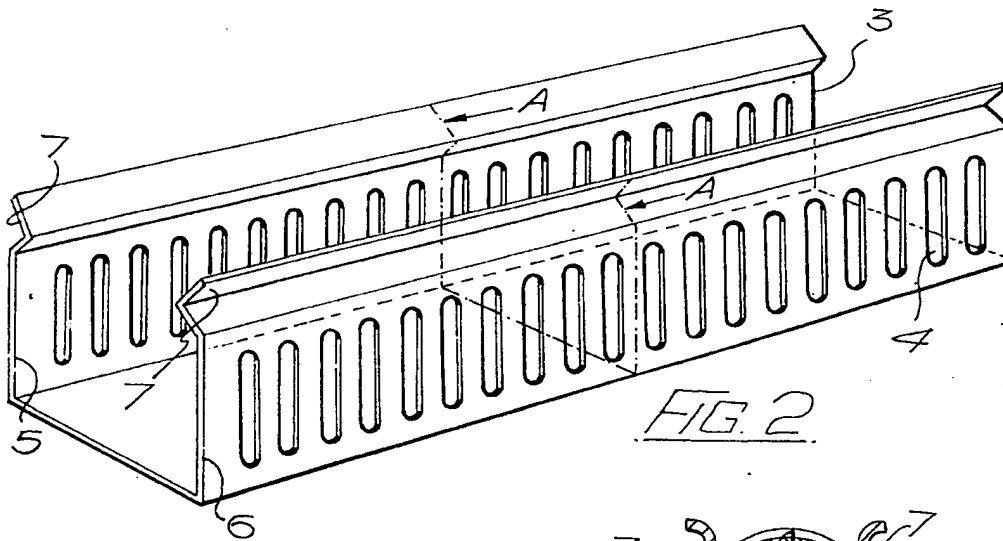
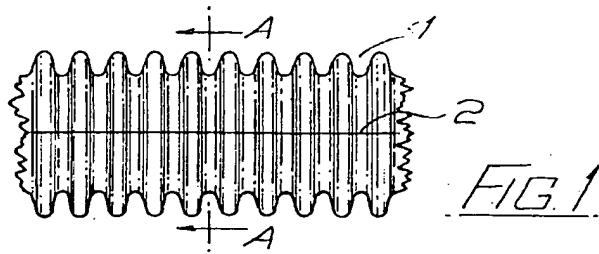


FIG. 10

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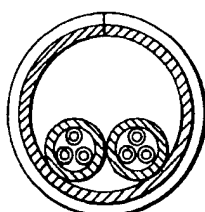


FIG. 5

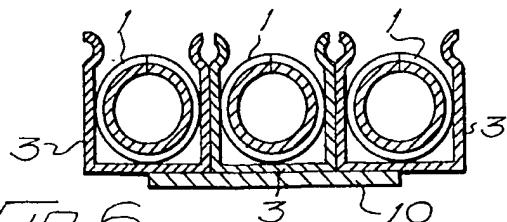


FIG. 6

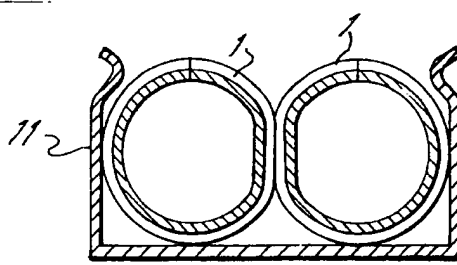


FIG. 7

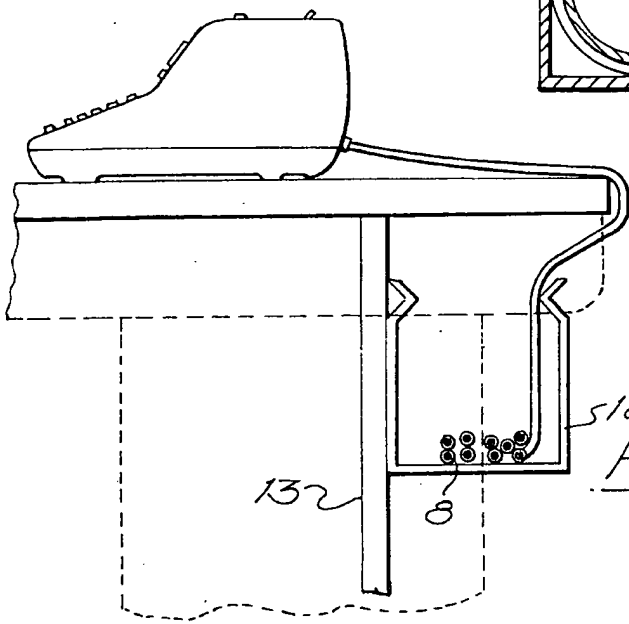


FIG. 8

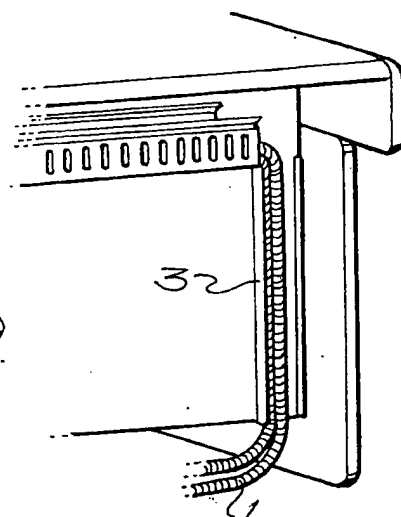


FIG. 9

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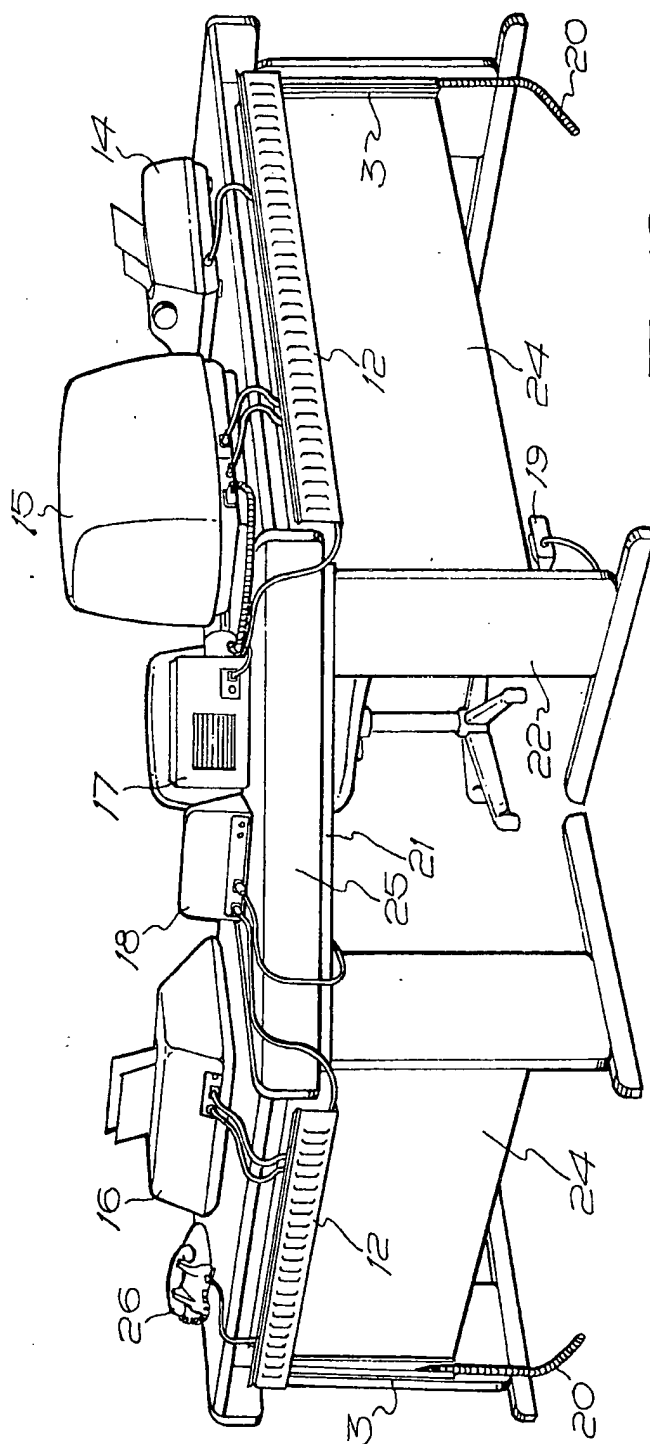


FIG. 10.

SPECIFICATION

Cable tidy system

5 This invention relates to a cable tidy system, and furniture, notably desks and workstations fitted with the system. The system can be employed, notably in offices, to hold cables and wires connected to machinery particularly that located on or in desks or

10 workstations.

Hitherto cable has generally been run in either a "captive" or a "free wired" system. A captive system involves the threading of wires through desk supports, frames and through holes cut in desk tops.

15 Whilst almost totally concealing any wires within the desk structure these systems make relocation of any equipment very difficult. There is also the risk that a piece of equipment connected to a desk by a captive wired system may be moved inadvertently whilst it is still connected to the desk, with resulting damage. A free wired system merely involves letting any cables trail over the desk wherever is necessary such that a rather untidy arrangement results.

According to the present invention there is provided
25 a first conduit to be fixed in position, at least one second conduit to receive and substantially surround cables so as to retain them therein, the second conduit having an opening or being openable along its entire length to enable insertion of cable, and the first
30 conduit having an opening or being openable to enable insertion of the second conduit(s).

It is not essential that there is a gap at the opening into either conduit, provided a gap can be formed to enable insertion. In a preferred arrangement the
35 second conduit has a slit along its length which is biased shut but can be opened out against resilience, while the first conduit has an open mouth enabling insertion of second conduit(s).

The second conduit or a plurality of second conduits
40 running side by side, should desirably be retained when inserted into first conduit. The preferred way to accomplish this is for the first conduit to open through a restricted throat, and for the second conduit (or a plurality thereof) to be dimensioned to snap fit into the
45 first conduit.

The first conduit may be relatively rigid while the second conduit may be relatively flexible, although stiff enough to bridge short gaps.

It is not necessary that both conduits should extend
50 the full length of a cable run. Either conduit could be used alone for part of a run.

The preferred form of the invention allows first conduits to be secured to desks and one or more cables to be inserted into a second conduit which may
55 then be snapped into the first conduit. In each case insertion is laterally through the opening along the length of the conduit. Whilst the cables will be held tidily in position is normal use, if a cable is inadvertently pulled it will be able to release itself without
60 damage. Furthermore the system is very cheap and quick to install as no threading of cables is required.

The use of second conduits surrounding the cables

may be utilized to provide separation of cables which should be separated to prevent interference. Flexible
65 second conduits may be sufficiently stiff to be self supporting over short gaps, e.g. between first conduits secured to adjacent desks.

The cable tidy system is particularly intended for use with office furniture, but may also be mounted on
70 other suitable surfaces.

In a second aspect this invention provides a desk or workstation having cable conduit fitted thereto which has an opening along its length permitting the insertion of cable laterally thereinto.

75 Embodiments of the present invention will now be described by way of example with reference to the following drawings in which:

Fig. 1 shows a length of second conduit.

Fig. 2 shows a perspective view of a length of first
80 conduit.

Fig. 3 shows a cross sectional view on A-A of a first conduit (as shown in Fig. 2) containing a second conduit (as shown in Fig. 1).

Fig. 4 shows a cable being inserted into a length of
85 second conduit and a length of second conduit containing a cable which has been inserted into a length of first conduit.

Fig. 5 shows a cross section on A-A of a length of second conduit (shown in Fig. 1) containing two
90 cables.

Fig. 6 shows a cross section of an array of first conduits for securing to a desk surface.

Fig. 7 shows a cross section of a first conduit containing two second conduits.

95 Fig. 8 shows a side view of a first conduit secured to a desk.

Fig. 9 shows a perspective view of first and second conduits secured to a desk.

Fig. 10 shows a perspective view of a workstation
100 using a cable tidy system according to an embodiment of the present invention.

Fig. 1 shows a length of second conduit 1 which is corrugated and provided with a slip 2 along its length. The second conduit 1 is made from a plastics material,
105 and is sufficiently resilient to bias the slit 2 to a closed position. It is fairly stiff, yet sufficiently flexible to be bent around corners. The corrugations contribute to the strength and flexibility of the conduit.

110 Fig. 2 shows a length of first conduit 3 which is made of plastics material. Lengths of first conduit may also be constructed from metal by bending or stamping sheet material or by extrusion.

The length of the first conduit is provided with sides
115 5, 6 which each have indentations 7 at their upper edges, so that the conduit opens through a throat delimited by the indentations 7. The sides 5, 6 are sprung by their natural resilience such that a length of second conduit may be bodily inserted into the first
120 conduit by forcing the sides 5, 6 slightly apart which after insertion of the second conduit regain their original positions thus providing a snap fit and retaining the second conduit by means of the indentations 7 as shown in cross section in Fig. 3.

The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

The second conduit 1 is capable of having at least one cable 8 inserted laterally and bodily inside it through the slit 2 along its length. The slit 2 closes after insertion of the cable so as to retain it, as shown in Fig.

4. After insertion of cable within a length of second conduit, the length of second conduit 1 containing the cable 8 may be inserted into and retained by a length of first conduit 3 to provide an assembly 9 as shown in Fig. 4. More than one cable may be inserted within a length of second conduit if desired (as shown in Fig. 5) the number depending on the relative cross-sectional areas of conduit and cables.

- In certain cases it may be necessary to separate cables. This may be achieved by using several parallel lengths of second conduit one for each type of cable (for example power cables, telephone wires, dictating machine cables etc.). These may either be secured in an array of first conduits secured to a common base 10 as shown in Fig. 6 or, a plurality of second conduits can be contained in the same first conduit 11 as shown in Fig. 7.

- In use, lengths of cable have at least part of their length inserted into a length of second conduit, lengths of first conduit are secured to a desk or workstation and at least part of the length of second conduit, with cable therein is inserted into one or more of the lengths of first conduit thus holding the cable in place, in a tidy fashion.

- It is conceivable that for horizontal parts of a cable run, only one conduit might be used. For instance several cables running from wall sockets to a desk could be grouped with second conduit, but without this being retained in first conduit until it reaches the desk. Also lengths of first conduit could extend as a horizontal tray with cable simply laid in this tray. However, for at least part of the run both conduits are used. Fig. 8 illustrates the latter possibility. It shows a length of first conduit 12 of large cross sectional area secured horizontally to the "modesty panel" 13 of a desk for use as a tray for cables 8 with or without lengths of second conduit surrounding them. Fig. 9 also shows such an arrangement. However, a length of first conduit 3 is also used in a vertical position to retain a portion of the cable 8 which is surrounded by a length of second conduit 1.

- When used to tidy the cables associated with the equipment used on an office desk or workstation a combination of features may be used as shown in Fig. 11. Here a workstation is formed by two desks 24 and a triangular connecting piece 25. On the working surface so formed a typewriter 14, VDU 15, printer 16, disk drive 17, dictation machine 18 with footswitch 19, and a telephone 26 have all their cable tidied.

- The power leads 20 to each desk are grouped within a second conduit which runs across the floor from floor sockets, not shown, and is held in lengths of first conduit 3 secured vertically to the rear of the desks. The cables then pass along lengths of large first conduit 12 from where they are led to their respective machines. The lengths of first conduit 3 are secured to the desk by screw fixings or double sided adhesive tape. The lengths of large first conduit 12 also serve to hide loops of surplus cable. Between the two desks a further length of first conduit 21 is run beneath the connecting piece 25 and this contains a length of

second conduit for wires running between the desks such as that 22 for the footswitch of the dictation machine 18. This cable descends to the floor in further first and second conduits 3 (not shown) behind the desk leg 23. The telephone cable is run from a floor socket to one desk, in second conduit, where the second conduit continues up one leg within first conduit, similarly to the power cables.

- The arrangement described has the advantage that the cable is tidied, but it can be assembled without any need to thread cable axially through conduit. It can be dismantled or rearranged without unthreading and if a cable is strained, for example if equipment is moved, without releasing the cable, the cable can pull laterally out of the conduits.

- The first and second conduits described above can be provided by known materials—the second conduit material has hitherto been provided as a packaging material used to protect the edges of glass. Suitable dimensions for first and second conduits which could be used and which will snap-fit together are:

- First conduit: 15mm internal with, 15mm depth, 12-13mm across throat; associated second conduit 15mm greatest external diameter.
Larger first conduit: 27mm internal width, 20mm depth, 23mm across throat; associated second conduit; 25mm greatest external diameter.
Large first conduit, suitable for trays, 55mm external width, 50mm depth.

CLAIMS: FILED ON (15-11-82)

1. A cable-tidy system comprising a first conduit to be fixed in position, and at least one second conduit to receive and substantially surround cables so as to retain them therein, the second conduit having an opening or being openable along its entire length to enable insertion of cable, and the first conduit having an opening or being openable to enable insertion of the second conduit(s) into the first conduit.

2. A system according to claim 1 wherein the second conduit has a slit along its length which is biased shut but can be opened out against resilience, while the first conduit has an open mouth enabling insertion of second conduit(s) through that mouth into the first conduit.

3. A system according to claim 1 or claim 2 wherein the first conduit opens through a restricted throat and the conduits are dimensioned such that one second conduit or a plurality of second conduits held together can be snap fitted into the first conduit.

4. A system according to any one of the preceding claims wherein the second conduit is more flexible than the first conduit.

5. A system according to claim 4 wherein the first conduit is of channel section plastics material, the sides of which have indentations proximate to their upper edges, giving a mouth which is narrower than the channel.

6. A system according to claim 4 or claim 5 wherein the or each second conduit is corrugated plastics tube, with a slit along its length.

7. A cable-tidy system substantially as herein described with reference to the accompanying drawings.

8. In combination, a desk and a cable tidy system according to any one of the preceding claims, with at least one said first conduit attached to the desk.

9. A combination according to claim 8 having the
5 first conduit attached to the desk in an upright position.

10. In combination, a plurality of desks to be positioned adjacent to each other, and a cable tidy system according to any one of the preceding claims,
10 with at least one first conduit attached in an upright position to at least one desk and further first conduit providing a link between adjacent desks.

11. A combination according to claim 9 or claim 10 having a larger conduit extending horizontally as a
15 tray at the back of the or each desk.

New claims or amendments to claims filed on 8 July 1983.

Claims 1 to 3 superseded, replaced by claims 1 and
20 2, appendant claims and appendancies correspondingly renumbered.

1. A cable-tidy system comprising a first conduit to be fixed in position, and at least one second conduit to receive and substantially surround cables
25 so as to retain them therein, the or each second conduit having an opening or being openable along its entire length to enable insertion of cable, the first conduit opening through a restricted throat and the conduits being dimensioned such that one second
30 conduit or a plurality of second conduits bunched together can be snap fitted into the first conduit through the restricted throat thereof, with cables already in the second conduits and the opening(s) along the length of the second conduit(s) remaining
35 closed.

2. A system according to Claim 1 wherein the or each second conduit has a slit along its length which is biased shut but can be opened out against resilience.